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Citation for final published version:

Bear, Christopher ORCID: <https://orcid.org/0000-0001-7130-515X> 2017.  
Assembling ocean life: more-than-human entanglements in the Blue economy.  
Dialogues in Human Geography 7 (1) , pp. 27-31. 10.1177/2043820617691635  
file

Publishers page: <http://dx.doi.org/10.1177/2043820617691635>  
<<http://dx.doi.org/10.1177/2043820617691635>>

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*Commentary*

**Assembling ocean life: more-than-human entanglements in the Blue Economy**

Christopher Bear, School of Geography and Planning, Cardiff University, UK

**Abstract**

While welcoming the intervention of Winders and Le Heron as opening up a space for critical – and practical – engagement with so-called ‘Blue Economy’ thinking, their employment of assemblage approaches could be extended. Doing so might produce a different conceptualisation of the blue economy, while concurrently establishing new challenges for blue economic practices. In this commentary, I focus on three key areas: 1) the ontological separation of land and sea and the conceptualisation of ‘marine space’; 2) the ‘liveliness’ of oceans; and 3) practical possibilities for Blue Economy policies to draw on and engage with ‘wet ontologies’. I argue that future geographical research on the Blue Economy would benefit from moving away from categorisations of the ‘ecological’ or ‘bio’ and towards a fuller engagement with the diversity of actants and forces that contribute to the emergence of new practices, policies and (de)territorialisations.

**Keywords**

More-than-human, assemblage theory, blue economy, geographies of the sea, dynamic ocean management

The so-called Blue Economy has, as Winders and Le Heron highlight in their timely intervention, become the focus of significant discourses around the future management of oceans. The lack of geographical research on this discourse and its associated practices is perhaps unsurprising; while Connery (2006: 496) identified a 'scholarly turn to the ocean' a decade ago, human geographers' engagement with the oceanic remains relatively limited (in spite of notable exceptions including Anderson and Peters, 2014; Peters, 2010; Cardwell and Thornton, 2015; Bear, 2013; Steinberg, 2001; Steinberg and Peters, 2015), and with the Blue Economy almost non-existent. Winders and Le Heron make a strong case for further engagement with the Blue Economy, arguing that this should be of significant interest even to those whose research has not previously extended to oceans or fisheries. Building on Silver *et al*'s (2015) analysis of the Rio+20 development of competing discourses around the Blue Economy, they focus on the fluidity of the concept, which they view as an 'emergent assembling' (p.25), and on how engaging with this emergence opens new possibilities for making bio-economic relations differently.

While I very much welcome their contribution – for its stimulation of geographic debate around the conceptualisation of oceans, its critical engagement with the Blue Economy, and for the emphasis on the possibilities offered by practical engagement with the policy-making process – their application or development of assemblage thinking remains somewhat implicit. Mobilising 'assemblage approaches' (p. 16), they argue, helps to probe 'conditions of

possibility and the impacts of conceptual restriction in contextual settings' (p. 12), while 'advocating the re-assembling of the human and more than human in marine space' (p. 28). Their paper makes frequent reference to 'assemblage' vocabulary, such as emergence, fluidity and the more-than-human. I would suggest, however, that these ideas could be developed considerably further than they have been in the existing paper. If this line of thinking were taken further, how might it produce a different conceptualisation of the Blue Economy? How might it emphasise different actors and forces? And how might it help to make sense of the relationships between the oceanic and the terrestrial (or, indeed, the 'green' and the 'blue')?

In order to address such questions, it might be useful to extend the dialogue between Winders and Le Heron's paper and existing assemblage writing on the oceanic. While there is only a limited body of work in this area, some key themes stand out that help to flesh out some of the broader points made in their paper. First, a number of authors have questioned the ontological separation of land and sea (e.g. Bear, 2013; Spence, 2014; Steinberg and Peters, 2015). While Winders and Le Heron hint at a critique of this, they continue to refer unproblematically to 'marine space'. I question, therefore, the continued utility of this term in relation to the Blue Economy, and in relation to an assemblage framework. Second, a key feature of assemblage thinking on oceans is a focus on their *liveliness* (e.g. Bear, 2013; Gibbs and Warren, 2014; Peters, 2010; Steinberg and Peters, 2015). Although Winders and Le Heron talk of enlisting 'efforts in the construction of socio-ecological knowledge which re-explore

human and more than human intra-actions', for them the more-than-human often seems reducible to 'ecological conditions', 'natural resources', or one side of 'bio-economic relations'. How might the 'ecological conditions' of the Blue Economy be teased apart and viewed anew, with the lively heterogeneity of actants and forces brought to the fore? Third, Winders and Le Heron highlight the potential to *do* the Blue Economy differently, moving away from more traditional notions of economy as fixed or pre-established and towards one that is 'storied' and emergent. I suggest that this line of thought might be extended through an engagement with recent advances in 'dynamic ocean management' (Maxwell *et al*, 2015), which offers a means by which to build fluidity and emergence into ocean management and governance. In what follows, I attend to each of these points in turn.

The blue of the eponymous economy is, as Winders and Le Heron discuss, suggestive of a very different form – and space – of economy from those that are classified as 'green' or 'brown'. As they note, for the UN (2013: 3) this differentiation is in the incorporation of 'ocean values and services into economic modelling and decision-making processes', and it is this placing of economic relations in the ocean that seems to set the 'blue' apart. Winders and Le Heron comment on the frequent 'relegation of inland waters, waterways and constructed water holding installations' from 'Blue Economy accounts', but argue nonetheless that 'water is the connective tissue around biological-economic relations'. This, however, is to accept the *difference* and centrality of the 'blue'. In a previous paper (Bear, 2013), I argued for a 'very

particular conceptualization of the sea, which is not limited to the expanse of water itself, as this is not where all the associations are played out' (p. 36). In that particular case, which was a study of a debate about the impact of dredging practices and technologies on underwater ecologies, there was no single connective tissue: at times, fishing vessels were drawn towards or pushed away from particular areas by 'local' management policies; and the movement of animal populations drew seemingly unconnected and topographically distant areas into an ostensibly local and bounded management dispute. Water itself was directly implicated in that particular debate as a potential cause of damage to the seabed through its incessant movement. However, rather than focusing on a single connective tissue, it might be productive to explore the 'blue' as 'a plane of immanence that can be folded, unfolded, and refolded in many ways' (Doel, 2000: 126). This folding may involve ocean waters, but sometimes unanticipated 'lines of flight' (Deleuze and Guattari, 1988) – the movement of fish, the discovery of a source of oil, a new regulatory framework – can disturb, or deterritorialise, any neatly-bounded sense of the blue, or of 'marine space'. As Doel (2000: 125) argues, 'it would be better to approach space as a verb rather than as a noun'; with what spacings, therefore, does 'Blue Economy thinking' contend, how do these emerge, and what possibilities do they offer for further reimagining what the Blue Economy could be?

Implicit in the previous point is a question over what actants and forces are involved in the spacings with which Blue Economy scholarship and practice might engage. Winders and Le

Heron set out to aid 'relational thinking on re-territorialising human and non-human entanglements in coasts, seas and oceans'. But what, exactly, are these entanglements? At one level, this is an issue of framing and representation; over how animals and other nonhumans are framed by Blue Economy 'imaginings', and in turn how such framings affect both their everyday lives and their very existence. For the fisheries that form the focus of Winders and Le Heron's paper, this might be a question of how fish are framed as economic resources or as requiring protection, or alternatively of how humans might interact with fish most appropriately, such as through the mediation of particular technologies. However, as Boucquey *et al* (2016: 2) observe, 'Ideally, researchers might use "assemblage thinking" to trace how human and non-human elements, ideas, and practices come together; how particular configurations are maintained or dissolved'. For them, the representation of both human and non-human actants 'in documents and narratives enables us to consider the potential agency of non-human actors in the MSP assemblage' (p. 5). In contrast, in my own work, I am interested in how such non-human actants are not only represented in different ways, but in how their *actions* and forces disrupt these representations and associated practices – whether in relation to the sun's role in the life, death and impact of bacteria in assessments of water quality (Bear, 2016) or the movement of fish in complicating the constitution of a 'sustainable' fishery (Bear and Eden, 2008). Rather than the economy being 'embedded in ecological conditions' as Winders and Le Heron suggest, such examples point to the dynamism of aquatic assemblages, where 'conditions' are in constant flux and 'the economic' is inseparable from (rather than embedded in) 'the ecological'. Further, it is not

only nonhuman animals that might bring a 'liveliness' to Blue Economy studies. Some of this 'liveliness' might lie in the sea itself (notwithstanding my earlier comment about moving away from a sole focus on water as a connective tissue). Steinberg and Peters (2015: 254), for instance, highlight the distinctive qualities of the sea, arguing that 'the volume of the sea shifts very differently' to terrestrial volume:

...the sea, in comparison with other elements, shifts much more readily – and not just in its physical state. Its volume can also shift spatially through the large-scale movements facilitated by tides and by other forces that are both planetary (for example, winds, jet streams) and extraplanetary (for example, gravity). The volume of water moves and so its territory and its location cannot be pinned down. This challenges processes of bordering with a particular intensity not found on land.

How might such issues help to inform a critical reading of – and intervention in – Blue Economy practice, policy and thinking more generally? Winders and Le Heron demonstrate some such possibilities in their original intervention in New Zealand, recharacterising 'economy' as emergent rather than simply 'knowable from national data sets', and in finding different ways to link 'social and ecological processes in framings that exceeded a science view of a need to quantify social impacts'. However, if Blue Economy thinking is to be advocated as a route through which more convivial more-than-human relations might emerge, more might be done to practice Steinberg and Peters' (2015) notion of a 'wet ontology' that is sensitive to



the heterogeneity of actants and forces, alert to fluidity, and questioning of fixed boundaries. Boucquey *et al* (2016) engage with this at one level, advocating participatory GIS 'as a way to attend to more of the differences and realities in diverse ocean users and encounters' (p.9), and moving away from more static or singular inscriptions. If 'representing human-use information' (Boucquey *et al*, 2016: 8) remains difficult, finding ways in which to engage with the actions and forces of nonhumans is a considerably greater challenge. However, recent technological advances point towards new possibilities, where 'dynamic ocean management' aims to 'become as fluid in space and time as both the marine environment and the marine resource users' (Maxwell *et al*, 2015: 43), drawing on real-time data (e.g. from animal tracking or daily fishery reports) to enable flexible 'management responses' (*ibid*). While such approaches are in their relative infancy, and their application to date has largely focused on the management of fisheries, the application of dynamic ocean management 'could extend to a broad array of human activities in the ocean including military operations, alternative energy sources (such as wind, solar, and tidal energy), and oil and gas production' (Hobday *et al*, 2013: 128). Such scientific and technological advances offer new opportunities for Blue Economy thinking to extend into emergent more-than-human entanglements and act as a critique of more 'terrestrocentric approaches' (Bear and Bull, 2011: 2261).

The discursive shift towards the Blue Economy holds considerable promise for doing ocean management differently; Winders and Le Heron have furthered this agenda by showing the

possibility for doing Blue Economy differently. Indeed, their focus on Blue Economy as emergent, rather than as ontologically static, helps – as they identified – to direct attention to possibilities rather than limitations. The liveliness of the Blue, however, extends beyond human practices of management and extraction, and is awkwardly contained within, and restrained by, categorisations of the bio or the ecological. Future work on the Blue Economy might usefully build on the foundations laid by Winders and Le Heron in teasing apart the ‘bio-economic’, investigating the diversity of actants and forces that contribute to the emergence of new practices, policies and (de)territorialisations, and exploring means by which to engage practically with aquatic liveliness.

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